

CLAIMS

What is claimed is:

1. A process for fabricating a leadless plastic chip carrier, comprising:
 - partially etching at least a first surface of a leadframe strip to partially define a die attach pad, a plurality of contact pads disposed around said die attach pad, and a plurality of bond fingers intermediate said die attach pad and said contact pads;
 - laminating a metal strip to the first surface of said leadframe strip;
 - selectively etching a second surface of said leadframe strip such that portions of the leadframe strip are removed to define a remainder of said die attach pad, said plurality of contact pads, said plurality of bond fingers and circuitry between ones of said bond fingers and ones said contact pads;
 - mounting a semiconductor die to said die attach pad;
 - wire bonding said semiconductor die to ones of said bond fingers;
 - encapsulating said second surface of said leadframe strip, said semiconductor die and said wire bonds in a molding material;
 - removing said metal strip from said first surface of said leadframe strip; and
 - singulating said leadless plastic chip carrier from a remainder of said leadframe strip.
2. The process according to claim 1, further comprising depositing an etch-resist metal on said second surface of said leadframe strip, at said die attach pad, said plurality of contact pads, said plurality of bond fingers and said circuitry, prior to selectively etching.
3. The process according to claim 1, further comprising selectively depositing an etch-resist on said second surface of said leadframe strip, at said die attach pad, said plurality of contact pads, said plurality of bond fingers and said circuitry, prior to laminating.
4. The process according to claim 3, wherein selectively depositing said etch resist comprises selectively depositing one of silver, nickel and then gold, and nickel and then palladium.
5. The process according to claim 1, wherein said metal strip is a plated metal strip.

6. The process according to claim 1, wherein further comprising plating first and second surfaces of said metal strip prior to laminating.

7. The process according to claim 5, wherein said plating comprises plating one of tin and solder on first and second surfaces.

8. The process according to claim 1, wherein laminating comprises rolling of said metal strip with said leadframe strip, at a controlled temperature and pressure and with a flux.

9. The process according to claim 1, wherein laminating comprises hot rolling said metal strip with said leadframe strip, at a controlled temperature and pressure, with a flux and forming gas.

10. The process according to claim 1, further comprising attaching solder balls to said contact pads exposed as a result of removing said metal strip from said first surface of said leadframe strip.

11. The process according to claim 1, further comprising applying solder to said contact pads and said die attach pad exposed as a result of removing said metal strip from said first surface of said leadframe strip.

12. The process according to claim 11, wherein said applying comprises reflowing solder balls on said contact pads and said die attach pad.

13. The process according to claim 11, wherein said applying comprises printing solder paste on said contact pads and said die attach pad.

14. A process for fabricating a leadless plastic chip carrier, comprising:
partially etching at least a first surface of a leadframe strip to partially define a die attach pad, a plurality of contact pads disposed around said die attach pad, and a plurality of bond fingers intermediate said die attach pad and said contact pads;
depositing an etch-resist on a second surface of said leadframe strip, at said die attach pad, said plurality of contact pads, said plurality of bond fingers and circuitry between

ones of said bond fingers and ones of said contact pads;

laminating a pre-plated metal strip to the first surface of said leadframe strip;

selectively etching said second surface of said leadframe strip such that portions of the leadframe strip are removed to define a remainder of said die attach pad, said plurality of contact pads, said plurality of bond fingers and said circuitry;

mounting a semiconductor die to said die attach pad;

wire bonding said semiconductor die to ones of said bond fingers;

encapsulating said second surface of said leadframe strip, said semiconductor die and said wire bonds in a molding material;

removing said metal strip from said first surface of said leadframe strip; and

singulating said leadless plastic chip carrier from a remainder of said leadframe strip.

15. A process for fabricating a leadless plastic chip carrier, comprising:

partially etching at least a first surface of a leadframe strip to partially define a die attach pad, a plurality of contact pads disposed around said die attach pad, and a plurality of bond fingers intermediate said die attach pad and said contact pads;

laminating a pre-plated metal strip to the first surface of said leadframe strip;

depositing an etch-resist on a second surface of said leadframe strip, at said die attach pad, said plurality of contact pads, said plurality of bond fingers and circuitry between ones of said bond fingers and ones of said contact pads;

selectively etching said second surface of said leadframe strip such that portions of the leadframe strip are removed to define a remainder of said die attach pad, said plurality of contact pads, said plurality of bond fingers and said circuitry;

selectively plating metal onto at least the bond fingers;

mounting a semiconductor die to said die attach pad;

wire bonding said semiconductor die to ones of said bond fingers;

encapsulating said second surface of said leadframe strip, said semiconductor die and said wire bonds in a molding material;

removing said metal strip from said first surface of said leadframe strip; and

singulating said leadless plastic chip carrier from a remainder of said leadframe strip.

16. The process according to claim 14, wherein selectively plating metal onto at least the bond fingers comprises selectively plating at least one of Ag, Ni/Au or Ni/Pd onto the bond fingers.

17. A leadless plastic chip carrier comprising:

- a die attach pad;
- a plurality of contact pads disposed around said die attach pad;
- a plurality of bond fingers intermediate said die attach pad and said contact pads;
- circuitry extending between ones of the bond fingers and ones of the contact pads;
- a semiconductor die mounted to a first surface of said die attach pad;
- a plurality of wire bonds between the semiconductor die and ones of said bond fingers; and
- an encapsulant covering said second surface of said leadframe strip, said semiconductor die and said wire bonds in a molding material.

18. The leadless plastic chip carrier according to claim 17, further comprising an etch-resist metal on the first surface of said die attach pad and on a first surface of said contact pads, said bond fingers and said circuitry.

19. The leadless plastic chip carrier according to claim 18, wherein said etch-resist metal is selected from the group consisting of silver, nickel and then gold, and nickel and then palladium.

20. The leadless plastic chip carrier according to claim 17, further comprising a plurality of solder balls fixed to a second surface of said contact pads.